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Management Accounting Practices: A Comparative Analysis of Manufacturing and Service Industries

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Abstract

The study aims to examine the use of the management accounting techniques in manufacturing and service industries of Bangladesh for discharging managerial functions. To achieve this objective, 151 organizations from manufacturing and service industries have been surveyed with a structured questionnaire by using 5 point Likert scale. By identifying fourteen management accounting techniques, three factors have been identified to determine the variability's of the usage level in managerial functions. The total variabilities in application of management accounting techniques in managerial functions of manufacturing and service industries, 73.343 % and 54.396% respectively. The findings reveal that management accounting techniques such as financial statement analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis are common 14 both the industries and are used frequently in managerial functions.

Keywords: Management Accounting Techniques, Quantitative Techniques, Qualitative Techniques, Manufacturing Industry, Service Industry , Managerial Functions.

Introduction

Management accounting is a technique of presenting accounting information to the various levels of management in order to enable it to perform its functions of planning, control and decision-making more efficiently. By conveying pertinent accounting data in time and at less cost, the management accounting system assists management in the formulation of policy, efficient execution of the same, control of performance and decision-making (Iyengar, 2000).

Managerial accounting is relevant to many activities of managers. Managers develop strategies for achieving goals, evaluate the performance of workers and other managers and make decisions. Managers decide the prices to be charged for their products, whether to continue selling particular products and whether to build a new factory. Many activities performed by managers have to do with acquiring and using economic resources (money, people, machinery, buildings) and managers need information to make those decisions. Management accounting applies to businesses because it deals with economic information and businesses seek profits and other economic goals. Managerial accounting also applies to organizations that do not seek profits-government units, universities, hospitals and churches – because those organizations, like businesses, use economic resources to achieve their objectives. Hence, an understanding of the concepts of managerial accounting is important to managers in any organization (Louderback and Holmen, 2003).

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In the past, managerial accountants were primarily engaged in cost accounting- collecting and reporting costs to management. Recently that role has changed significantly. First, as the business environment has become more automated, methods to determine the amount and type of cost in a product have changed. Second, managerial accountants are now held responsible for strategic cost management, that is assisting in evaluating how well the company is employing its resources. As a result, managerial accountants now serve as team members alongside personnel from production, marketing and engineering when critical strategic decisions are being made (Weygandt et al, 2008).

The last two decades have been a period of wrenching change for many businesses and their employees. Many managers have learned that cherished ways of doing business do not work anymore and that major changes must be made about how organizations are managed and how work gets done. These changes are so great that some observers view them as a second industrial revolution. It is having profound effect on the practice of managerial accounting. Since the early 1980s, many companies have gone through several waves of improvement programs, starting with Just-In-Time (JIT) and passing on to Total Quality Management (TQM), Process Reengineering and various other management programs including in some companies the Theory of Constraints (TOC). When properly implemented, these improvement programs can enhance quality, reduce cost, increase output, eliminate delays in responding to customers and ultimately increase profits (Garrison and Noreen, 2003).

Information needed by managers varies with the type of business and their role within the organization. A lot of management accounting information are based on quantitative and qualitative data. This interest was initially prompted by a perceived gap between the theory and the practice of management accounting, and specially the generally held belief that the traditional wisdom of management accounting textbooks is not widely used in practice. This belief was based on a few published studies (such as Cooper et. al., 1983, Berry, 1984, Wilkinson, 1986, Ouibrahim and Scapens, 1988 etc.) on the use of particular management accounting techniques (Hoque, 1991). Most of the studies in relation to management accounting techniques conducted in Bangladesh are on manufacturing firm. Bidhan (2007) has examined the status of use of management accounting techniques in the manufacturing enterprises of Bangladesh. It has been discovered that modern techniques like Activity-Based Costing, Target Costing, Just-in-Time (JIT), Total Quality Management (TQM), Process Reengineering and The Theory of Constraints (TOC) are not used in public and private sector manufacturing enterprises but a few Multinational Corporations (MNC) are using some of the techniques like JIT and TQM. Traditional techniques like Financial Statement Analysis, Standard Costing, Cash Flow Analysis, are also being found widely used followed by CVP Analysis, Marginal Costing, Fund Flow Analysis etc. Another research (Yeshmin and Das, 2009) has been conducted on financial institutions in Bangladesh. It has been revealed that managers of the financial institutions are very much satisfied in application of budgetary control analysis and variance analysis to measure their performance among the fourteen management accounting techniques. At the same time managers are very much dissatisfied with application of segment reporting.

This study has emphasized on the level of usage of fourteen management accounting techniques in managerial performance by manufacturing and service industries of Bangladesh. This study would be of particular importance to the academicians, researchers and concerned management people in Bangladesh, because it would help to asses the significant weight of management accounting techniques in managerial performance by manufacturing and service industries.

Objectives of the Study

The objectives of the study are as follows:

1. to conceptualize the management accounting techniques as quantitative and qualitative.
2. to show the comparative analysis between the manufacturing and the service industries in Bangladesh in respect of their usage level of management accounting technique in managerial functions.
3. to familiarize advanced management accounting techniques for their extensive use by the managers in manufacturing and service industries of Bangladesh.

Methodology of the Study

In this study the total number of organizations is 151. Among these 74 are manufacturing organizations and 77 are service organizations (Table – 1). Manufacturing industry include textiles, pharmaceuticals, food and allied, cement and ceramics, and service industry includes nationalized, private, foreign, specialized commercial banks, non-banking financial institutions, and private insurance companies.

Table 1: Sample of the Study

Manufacturing Industries	Sample	Service Industries	Sample
Textiles	32	Nationalized commercial banks	3
Pharmaceuticals	11	Private commercial banks	25
Food and allied	27	Foreign commercial banks	6
Cement	3	Specialized Commercial banks	3
Ceramics	1	Non-bank financial institutions	7
		Private Insurance	33
Total	74		77

This study is an exploratory one. The required data have been collected from the answers of a structured survey questionnaire given by each individual (senior officers of management level) of the manufacturing and the service industries. The managers are taken as the sample respondents of the study. This study is purposive and non-probabilistic in nature. For literature review and other purposes, different books, articles, manuals, websites and other secondary data have been reviewed. Survey questionnaire is based on 5 point Likert measurement scale where 1 represents always, 2 represents frequently, 3 represents sometimes, 4 represents rarely and 5 represents never. In this study mean score has been used to measure the relative significance of the management accounting techniques based on their usage level. Varimax component matrix has been conducted to measure the variability of the management accounting techniques in managerial performance.

Findings and Analysis

This research has been attempted to focus on the comparative significance of 14 management accounting techniques in managerial performance (Appendix – II). For this purpose the authors have selected two types of industries as samples viz manufacturing industry and service industry. In order to assess the importance of management accounting techniques in managerial performance, Likert measurement scale has been used by the authors. Mean score has been used as first statistical technique to analyze the relative significant management accounting techniques in managerial performance (Table – 2).

Table-2: Significant Management Accounting Techniques

Significant Management Accounting Techniques	Mean Score	
	Manufacturing Industry	**Service Industry**
Quantitative Management Accounting Techniques		
Financial Statement Analysis	4.2432	2.30
Budgetary Control	4.2027	1.68
CVP Analysis	4.0946	1.44
Variance Analysis	4.0541	1.75
Fund Flow Analysis	4.0541	2.09
Variable Costing	3.7568	1.25
Target Costing	3.6622	1.42
ABC	3.3919	1.14
Responsibility Accounting	2.9865	1.23
Segment Reporting	2.8919	1.32
Qualitative Management Accounting Techniques		
TQM	3.4459	1.40
TOC	3.0946	1.14
MBE	2.9730	1.16
Both Qualitative & Quantitative Management Accounting Techniques		
Balance Scorecard	3.3514	1.04

The above table demonstrates that among these techniques only five are common in both theindustries and are used frequently. These are financial statement analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis.

Secondly, the authors have done factor analysis to show the level of usage of these techniques in managerial functions. From the factor analysis of 14 statements, the authors have identified three factors in case of industries. Table- 3 and Table – 4 show rotated component matrix where selected techniques identify the level of significant usage in managerial functions in case of manufacturing and service industries respectively.

Table-3: Factor analysis of usage level of management accounting techniques in manufacturing industry

	Factors		
Variables	**1**	**2**	**3**
Financial Statement Analysis	.933		
Budgetary control	.923		
Variance Analysis	.912		
CVP Analysis	.901		
Variable Costing	.786		
Target Costing	.688		
Fund Flow Analysis	.685		
Segment Reporting	.528		
MBE		.823	
ABC		.742	
TOC		.676	
Responsibility Accounting			.812
Balance score card			.685
TQM			.594
% of variance explained	40.785	17.460	15.098
Cumulative %	40.785	58.245	73.343

Note: Only the loadings above 0.5 are presented in the factors

A factor analysis (Table – 3) of 14 statements suggests that in manufacturing industry, three factors have been chosen in terms of eigenvalue of larger than 1.0 .These three factors can explain 73.343% of the total variability in usage level of these management accounting techniques in managerial functions whereas factor analysis for service industry (Table – 4) shows also three factors in terms of eigenvalue of larger than 1.0 which has explained only 54.396% of the total variability in usage level.

Table-4: Factor analysis of usage level of management accounting techniques in service Industry

	Factors		
Variables	**1**	**2**	**3**
ABC	.793		
TOC	.760		
Variable Costing	.748		
Balance Score Card	.733		
TQM	.686		
Target Costing	.646		
Segment Reporting	.630		
Responsibility Accounting	.618		
MBE	.601		

Cont. Table

	Factors		
Variables	**1**	**2**	**3**
CVP Analysis	.531		
Budgetary control		.898	
Variance Analysis		.577	
Financial statement analysis			.696
Fund Flow analysis			.688
% of variance explained	34.943	10.482	8.971
Cumulative %	34.943	45.425	54.396

Note: Only the loadings above 0.5 are presented in the factors

The *first* factor loads the highest scores i.e. 40.785% and 34.943% in case of manufacturing and service industries respectively. This factor includes eight techniques (financial statements analysis, budgetary control, variance analysis, CVP, variable costing, target costing, fund flow analysis, and segment reporting) in case of manufacturing industry, whereas ten techniques (ABC, TOC, variable costing, balance score card, TQM, target costing, segment reporting, responsibility accounting, MBE and CVP analysis) have the highest score in case of service industry. The *second* factor exhibits large loading of three techniques MBE, ABC and TOC- for scoring 17.460% in case of manufacturing industry. On the other hand, service industry loads budgeting control and variance analysis techniques as second factor which accounts for 10.482%.of the total variability in the usage level. And the last factor with a score of 15.098% includes three techniques, responsibility accounting, balanced score card and TQM scoring 15.098% in case of manufacturing industry while in service industry financial statement analysis and fund flow analysis with a load or score of 8.971% of total variability in usage level rank as third factor.

Now an attempt is made to find out the level of usage based on mean score in both the industries. Summarizing those the most important techniques in order of level of usage are presented in Table – 5 below:

Table-5: List of Techniques according to extent of usage level

	Manufacturing Industry	**Service Industry**
Significant	Cash flow Statement Analysis	Budgetary Analysis
↓	Financial Statement Analysis	Variance Analysis
	Budgetary Control	TQM
	CVP Analysis	Fund Flow Statement
	Variance Analysis	Target Costing
	Fund Flow Analysis	Responsibility Accounting
	Variable Costing	Financial statement Analysis
	Target Costing	Variable Costing
	TQM	CVP
	ABC	MBE
	Balance Score card	Balance Score card
	TOC	TOC
	Responsibility Accounting	ABC
Insignificant	MBE	Segment reporting

The authors have observed that the manufacturing industry is using cash flow statement analysis and the service industry is using budgetary control frequently in managerial functions. Findings also reveal that MBE and Segment Reporting are not frequently used by the manufacturing and the service industries.

Conclusive remarks

Management accounting techniques are essential to exert control over cost and to appraise managerial performance. A good number of organizations are emerging in Bangladesh to contribute toward the economic development of the country. So it is essential to apply managerial accounting techniques to perform managerial functions.

Management accounting technique has evolved in the manufacturing industry. But now some service organizations are trying to adopt these techniques to improve their managerial performance. The present study reveals that the usage level of management accounting techniques is very frequent in manufacturing industry (73.343%) in comparison with the service industry (54.396%). It can be concluded that most of the organizations are favoring quantitative techniques as it is simple to use the qualitative techniques.

This study is particularly significant to the academicians, researchers and concerned managers in Bangladesh, because it is helpful to appraise the significant influence of management accounting techniques in managerial functions of manufacturing and service industries.

References

Berry, A. J. (1984), "The Control of Capital Investment," *Journal of Management Studies*, Vol. 21: 61-81

Bidhan, C. M. (2007)" Application of Management Accounting Techniques in Decision Making in the Manufacturing Business Firms in Bangladesh." *The Cost and Management* Vol. 35 No. 1January-February, 2007 pp. 5-18

Chakraborty, H. (1977), Management Accountancy, Vol. 1 (Calcutta: Nabavarat Publishers).

Cooper. D., R. W. Scapens and J. Arnold (1983), *Management Accounting: Research and Practice* (London: CIMA).

Garrison, H. Ray and Eric W. Noreen (2004), *Managerial Accounting* (New Delhi: Irwin McGraw – Hill).

Horngren, C. T., G. L. Sundem and W. O. Stratton (2002), *Introduction to Management Accounting* New Delhi: Pearson Education (Singapore) Pvt. Ltd.

Hoque, Zahirul A. K. M. (1991), "Researching Management Accounting Practice: The Debate about Quantitative and Qualitative Research," *Dhaka University Journal of Business Studies*, 12(2): 19-32.

Iyengar, S.P. (2000), *Cost Accounting- Principles and Practice*, Sultan Chand & Sons, New Delhi.

Kaplan, S. Robert and Anthony A. Atkinson (2001), *Advanced Management Accounting* ,New Delhi: Addison Wesley & Longman (Singapore) Pvt. Ltd.

Louderback, Joseph G and Holmen, Jay S.(2003), *Managerial Accounting*, Eastern Press, Bangalore.

Maheshwari, S. N. (1989), *Management Accounting for Bankers* (New Delhi: Sultan Chand & Sons Publishers).

Ouibrahim, N. and R. W. Scapens (1988), "Accounting for Control of a Socialist Enterprise: A Case Study of Algeria," Paper presented in Second Interdisciplinary Perspectives on Accounting Conference (U.K.: University of Manchester).

Sarker and Yeshmin (2005), Application of Responsibility Accounting: Bangladesh Perspective, *The Cost and Management*, Vol. 33, No. 6.

Wilkinson, Charles (1986), "Towards a Theory of Management Control System: A Case Study Approach," Unpublished Ph.D. Thesis (U.K.: University of Lancaster).

Weygandt, Kieso and Kimmel (2008), *Accounting Principles,* 8th edition, John Wiley and Sons, Inc.

Yeshmin, Farjana and S. Das (2009), "Management Accounting Techniques: Appraisal of managerial performance of the Financial Institutions in Bangladesh". *A Corporate Professional Journal of the Chartered Secretary, Vol. 11, issue 3.pp:25-32*.

Appendix – I: Survey Questionnaire

1. Name of Organization:
2. Industry type:
3. Usage level of the management accounting techniques in your organization (Tick any option for every row):

Management Accounting Techniques	Always	Frequently	Sometimes	Rarely	Never
Budgetary control					
Variance Analysis					
Cost Volume Profit (CVP) analysis					
Financial Statement Analysis					
Fund Flow Statement Analysis					
Activity Base Costing (ABC)					
Variable costing					
Target Costing					
Segment Reporting					
Responsibility Accounting					
Balanced Scorecard					
Management By Exception (MBE)					
Total Quality Management (TQM)					
Theory of Constraint (TOC)					

Appendix – II: Management Accounting Techniques

Techniques	Descriptions
Budgetary Control	Budgetary control is the system of management control in which all the operations, as sales, purchase, production etc. are forecasted in advance and the results, when known, are compared with the planned targets (Chakraborty, 1977).
Variance Analysis	Differences between standard prices and actual prices and standard quantities and actual quantities are called variances. The act of computing and interpreting variances is called variance analysis (Garrison and Noreen, 2004).
Cost-Volume-Profit Analysis(CVP)	Cost –Volume- Profit analysis helps managers understand the relationships among cost, volume and profit (Garrison and Noreen, 2004).
Financial Statement Analysis	Financial statement refers to such a treatment of the information contained in the Income Statement and the Balance Sheet so as to afford full diagnosis of the profitability and financial soundness of the business (Maheshwari, 1989).
Fund Flow Analysis	Working capital being life-blood of the business, analysis of fund flow is thus extremely useful. Financial analysts also have an understanding of changes in the distribution of resources between two balance sheet dates by analyzing the fund flow statements.

Activity Based Costing	Activity-based costing (ABC) developed to provide more accurate ways of assigning the costs of indirect and support resources to activities, business processes, products, services, and customers (Kaplan and Atkinson, 2001).
Variable Costing	Variable costing is a technique where only the variable costs are considered while computing a cost of a product. The fixed costs are met against the total fund arising out of excess of selling price over total variable cost (Maheshwari, 1989).
Target Costing	Target costing is a cost management tool for making reduction a key focus throughout the life of a product (Horngren, et. al., 2003).
Segment reporting	A segment is a part or activity of an organization about which managers would like cost, revenue or profit data. Effective decentralization requires segment reporting. In addition to the company wide income statement, reports are needed for individual segments of the organization (Garrison and Noreen, 2004).
Responsibility Accounting	The basic idea behind responsibility accounting is that a manager should be held responsible for those items- and only those items- that the manager can actually control to a significant extent (Garrison and Noreen, 2004).
Balanced Scorecard	A balanced scorecard consists of an integrated set of performance measures that are derived from the company's strategy and that support the company's strategy throughout the organization. Under the balance scorecard approach, top management translates its strategy into performance measures that employees can understand and can do something about.
Management by exception (MBE)	Management by exception means that manager's attention should be directed toward those parts of the organization where plans are not working out for one reason or another. Time and effort should not be wasted focusing on those parts of the organization where things are going smoothly.
Total Quality Management (TQM)	The most popular approach to continuous improvement is known as total quality management. There are two major characteristics of total quality management (TQM): (i)a focus on serving customers and (ii) systematic problem solving using teams made up of front-line workers(Garrison and Noreen, 2004).
Theory of Constraints (TOC)	A constraint is anything that prevents one from getting more of what he/she wants. Theory of Constraint (TOC) maintains that effectively managing the constraint is a key to success (Garrison and Noreen, 2004).

Appendix-III: Relative preferences of Management Accounting Techniques in Manufacturing Industry

Techniques	N	Mean	Std. Deviation
Budgetary control	74	4.2027	1.47100
Variance analysis	74	4.0541	1.42283
CVP analysis	74	4.0946	1.46343
Financial statement analysis	74	4.2432	1.47871
Fund flow analysis	74	4.0541	1.32305
ABC	74	3.3919	1.40271
Variable costing	74	3.7568	1.46007
Target costing	74	3.6622	1.64922
Segment reporting	74	2.8919	1.64331
Responsibility accounting	74	2.9865	1.54825
Balanced Scorecard	74	3.3514	1.30785
MBE	74	2.9730	1.44272
TQM	74	3.4459	1.54514
TOC	74	3.0946	1.46343

Appendix-IV: Relative preferences of Management Accounting Techniques in Service Industry

Techniques	N	Mean	Std. Deviation
Budget Analysis	77	1.68	.637
Variance Analysis	77	1.75	.905
CVP Analysis	77	1.44	1.198
Financial Statement Analysis	77	2.30	1.159
Fund Flow Statement	77	2.09	1.248
ABC	77	1.14	1.222
Variable Costing	77	1.25	1.102
Target Costing	77	1.42	1.080
Segment Reporting	77	1.32	.938
Responsibility Accounting	77	1.23	.999
Balance Score Card	77	1.04	1.219
MBE	77	1.16	1.101
TQM	77	1.40	.921
TOC	77	1.14	1.167